

CLAIMS:

1. A method of embedding a watermark signal in an information signal to obtain a watermarked information signal; the method comprising
 - 5 – determining a predetermined first property of a first part of the information signal, said predetermined first property being indicative of whether at least a predetermined first part of the watermark signal is detectable in the first part of the information signal;
 - embedding the at least first part of the watermark in the first part of the information signal to obtain the watermarked information signal, if the at least first part of the watermark signal is determined not to be detectable in the first part of the information signal; otherwise generating the watermarked information signal to include the first
10 part of the information signal.
2. A method according to claim 1, wherein embedding the at least first part of the watermark in the first part of the information signal to obtain the watermarked information
15 signal comprises
 - embedding the at least first part of the watermark in the first part of the information signal to obtain a modified part-signal;
 - determining a predetermined second property of the modified part-signal, said second property being indicative of whether said embedding results in a detectable
20 modification of the first part of the information signal; and
 - generating the watermarked information signal to include the modified part-signal, if the embedding is determined to result in a detectable modification of the first part of the information signal and if the at least first part of the watermark signal is determined not to be detectable in the first part of the information signal; otherwise
25 generating the watermarked information signal to include the first part of the information signal.
3. A method according to claim 1 or 2; wherein determining a predetermined first property comprises determining a first estimated watermark symbol from a first signal

frame of a sequence of signal frames of the information signal; and wherein embedding the at least first part of the watermark in the first part of the information signal to obtain the watermarked information signal comprises

- 5 – determining whether the estimated first watermark symbol matches a predetermined first watermark symbol of a sequence of watermark symbols; and
- embedding the first watermark symbol in the first signal frame to obtain a final watermarked signal frame, if the first estimated watermark symbol does not match the first watermark symbol; otherwise selecting the first frame as the final watermarked signal frame.

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4. A method according to claim 3, wherein embedding the first watermark symbol in the first signal frame to obtain a final watermarked signal frame further comprises

- embedding the first watermark symbol in the first signal frame to obtain a modified signal frame
- 15 – determining a second estimated watermark symbol from the modified signal frame;
- determining whether the estimated second watermark symbol matches the first watermark symbol; and
- selecting the modified signal frame as the final watermarked signal frame, if the second estimated watermark symbol matches the first watermark symbol and if the
- 20 first estimated watermark signal does not match the first watermark signal; otherwise selecting the first signal frame as the final watermarked signal frame.

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5. A method according to claim 1, wherein the information signal is an audio signal and wherein the watermark signal is an audio watermark signal.

6. A method according to any one of claims 1 through 5, wherein the information signal is divided into a sequence of frames, and the first part of the information signal is a first one of said sequence of frames.

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7. A method according to any one of claims 1 through 6, wherein the first part of the watermark comprises at least a first watermark symbol of a sequence of watermark symbols.

8. A method according to claim 7, wherein the sequence of watermark symbols comprises a sequence of binary watermark symbols.

9. An arrangement for embedding a watermark in an information signal; the arrangement comprising

- analyzing means (104; 202; 304) for determining a predetermined first property of a first part of the information signal, said predetermined first property being indicative of whether at least a predetermined first part of the watermark signal to be embedded is detectable in the first part of the information signal;
- embedding means (103,107; 201; 303,307) for embedding the at least first part of the watermark in the first part of the information signal to obtain a modified part-signal;
- a watermarked signal generator (106,107; 201; 306,307) for generating a final watermarked information signal; and
- control means (104; 202; 342) for controlling the watermarked signal generator to include the modified part signal in the final watermarked information signal, if the at least first part of the watermark signal is determined not to be detectable in the first part of the information signal; otherwise controlling the watermarked signal generator to include the first part of the information signal in the final watermarked information signal.

10. A watermarked information signal generated by a method according to any one of claims 1 through 8, the watermarked information signal comprising a plurality of part-signals, a first subset of the plurality of part-signals having embedded therein respective watermark symbols, a second subset of part-signals having no watermark symbols embedded therein.

11. A method of embedding a watermark signal in an information signal to obtain a watermarked information signal; the method comprising

- embedding at least a first part of the watermark in a first part of the information signal to obtain a modified part-signal;
- determining a predetermined first property of the modified part-signal, said first property being indicative of whether said embedding results in a detectable modification of the first part of the information signal;

- generating the watermarked information signal to include the modified part-signal, if the embedding is determined to result in a detectable modification of the first part of the information signal; otherwise generating the watermarked information signal to include the first part of the information signal.

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12. An arrangement for embedding a watermark in an information signal; the arrangement comprising

- embedding means (103; 201; 303) for embedding at least a first part of the watermark in a first part of the information signal to obtain a modified part-signal;
- 10 – analyzing means (104; 202; 304) for determining a predetermined first property of the modified part-signal, said first property being indicative of whether said embedding results in a detectable modification of the first part of the information signal;
- a watermarked signal generator (106,107; 201; 306,307) for generating a final watermarked information signal; and
- 15 – control means (104; 202; 342) for controlling the watermarked signal generator to include the modified part-signal in the final watermarked information signal, if the embedding is determined to result in a detectable modification of the first part of the information signal; otherwise controlling the watermarked signal generator to include the first part of the information signal in the final watermarked information signal.